

Amendments to the Claims

In the Claims:

1. (currently amended) An apparatus for forming a three-dimensional structure from a gaseous medium comprising:

a processing chamber containing the gaseous medium, the processing chamber at a pressure of about 100 pounds per square inch;

a plane in the processing chamber;

a laser light source to generate coherent collimated electromagnetic energy;

a computer driven phase plate operable to generate holograms at varying wave lengths directed into the processing chamber to deposit multiple definition compounds in the plane; and

a holographic projector to project ~~at least one~~ holograms into the gaseous medium within the processing chamber.

2. Canceled.

3. (currently amended) The apparatus of claim 1 further comprising a second holographic projector configured to project a second series of holograms into the gaseous medium to function with the first series of ~~at least one~~ holograms.

4. Canceled.

5. Canceled.

6. Canceled.

7. (currently amended) An apparatus to deposit a three-dimensional structure comprising:

a holographic projector comprising a laser source supplying a laser beam directed via optics to a phase spatial light modulator to project a series of holograms; and

a processing chamber, wherein the processing chamber further comprises:

a window, wherein the window is transparent to the holograms;

a plane on which the holograms are imaged;

an inlet to receive gas precursors from a gaseous delivery system, wherein the gas precursors comprise varying gas components, and wherein the hologram imparts energy to dissociate the gas precursors causing dissociated gas precursors to deposit in the plane in a pattern corresponding to the hologram;

a laser light source to generate coherent collimated electromagnetic energy;

a computer driven phase plate placed in a path of the coherent collimated electromagnetic energy to the hologram operable to generate holograms at varying wave lengths directed into the processing chamber to deposit multiple definition compounds in the plane; and

an outlet to exhaust effluent from the processing chamber.

8. Cancelled.

9. (currently amended) A method for forming a three-dimensional solid structure, the method comprising:

injecting a gas medium into a chamber;

generating coherent collimated electromagnetic energy with a laser light source;

positioning a computer driven phase plate in the coherent collimated electromagnetic energy path;

projecting a first series of holograms of varying wavelengths of electromagnetic energy from the computer generated phase plate into the chamber, the electromagnetic energy configured to impart energy to the gas medium that phase changes the gas into a three dimensional structure; and

influencing the gas phase change rate by controlling the chamber pressure.

10. (currently amended) The apparatus of Claim 1, wherein the energy to dissociate gas precursors corresponds to a wavelength of electromagnetic energy used to project the series of at least one holograms.
11. (previously presented) The apparatus of Claim 1, wherein the energy to dissociate gas precursors corresponds to absorption bands of the gas precursors.
12. (previously presented) The apparatus of Claim 1, wherein the gaseous medium pressure within the processing chamber is maintained at about 100 pounds per square inch.
13. (currently amended) The apparatus of Claim 1, wherein an intensity of the series of at least one holograms is manipulated to manipulate a deposition rate of the dissociated gas precursors.
14. (currently amended) The apparatus of Claim 3 wherein the gaseous organometallic compounds allow metal to be deposited in the pattern corresponding to the series of at least one holograms.
15. (currently amended) The apparatus of Claim 1, wherein the series of at least one holograms are is projected onto a stage within the processing chamber.
16. (previously presented) The apparatus of Claim 15, wherein the stage is thermally biased.
17. Cancelled.
18. (currently amended) The method of Claim 9, wherein the energy to dissociate gas precursors corresponds to a wavelength of electromagnetic energy used to project the first series of holograms and subsequent series of holograms.
19. (previously presented) The method of Claim 9, wherein the energy to dissociate gas precursors corresponds to absorption bands of the gas precursors.

20. (currently amended) The method of Claim 9, further comprising projecting a second series of holograms into the chamber that interferes with the first series of holograms to create dissociation and deposition in the chamber.

21. (currently amended) The method of Claim 9, wherein the holograms of electromagnetic energy are is created with a laser source, the method further comprising varying the laser source energy to thereby correspondingly vary the density of the structure being formed.

22. (previously presented) The method of Claim 9 wherein the gas precursors are gaseous organometallic compounds that allow metal to be deposited at the dissociated solids.

23. (currently amended) The method of Claim 9, wherein the first series of holograms and subsequent series of holograms are projected onto a stage within the processing environment.

24. (previously presented) The method of Claim 23, wherein the stage is thermally biased.

25. (previously presented) The method of Claim 9, wherein a holographic projector comprising a computer driven phase plate illuminated by a laser source is used to generate the first series of holograms and subsequent series of holograms.

26. Cancelled.